

Next Generation Sequencing (NGS) Markets 2015 (Systems, Consumables, Services, Acquisitions, Agreements, Competitive Analysis, Platforms, Applications, Brand Ownership and Other Trends)

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Abstracts

No business planner in biotechnology or diagnostic equipment or services can ignore the trend of sequencing, and particularly next-generation sequencing. This technology has enabled a wide scope of research and genetic analysis. The promise of DNA sequencing has attracted many companies, researchers, and investors. DNA sequencing has already become a large market, and clinical applications of DNA sequencing are being developed and commercialized. More than ever, marketers of advanced equipment and those investing in those companies need a resource to identify the specific developments in sequencing.

This report, Next-Generation Sequencing Markets (Systems, Consumables, Services, Acquisitions, Agreements, Competitive Analysis, Trends, Platforms, Applications, Brand Ownership) provides evidence of the promise and current excitement in the DNA sequencing market.

Tracking the Path of Sequencing to the Clinical Lab

Many improvements in sequencing technology are needed in order to make sequencing-based diagnostic tests widely available and used by all physicians, though DNA sequencing has successfully penetrated the research market. Applications of next generation sequencing in clinical laboratories and companies with CLIA-certified laboratories will continue to grow. The first next generation sequencing system and IVD tests have been cleared by the FDA, and more will follow. Some next generation sequencing companies are starting to develop and commercialize kits that can be

produced and sold to clinical laboratories following the traditional in vitro diagnostic (IVD) model.

Reasons for Optimism

Over the years, the DNA sequencing field has gone through periods of excitement (referred to as hype) by some, followed by periods of disappointment as the hoped for advances have not materialized as quickly as hoped or promised.

The promise of DNA sequencing has attracted many companies, researchers, investors, and others. DNA sequencing has already become a large market, and clinical applications of DNA sequencing are being developed and commercialized. Evidence of the promise and current excitement with DNA sequencing can be seen with many recent events:

The DNA sequencing market is growing rapidly. In October 2014, market leader Illumina raised the company's full year 2014 guidance for investors to a revenue growth for the company of approximately 30% over the previous year.

Roche and Foundation Medicine announced an agreement that is worth up to \$1.2 billion. Roche agreed to acquire a majority interest in Foundation Medicine for approximately \$780 million. Roche also agreed to invest \$250 million in Foundation Medicine, and to fund potentially more than \$150 million of R&D

Companies are raising money: In just the first part of January 2015, In addition to Roche's investment in Foundation Medicine, 10X Genomics closed a \$55.5 million Series B financing and Invitae filed for an initial public offering, These follow a busy 2014 year that saw many investments in next generation sequencing companies and companies with products or services related to next generation sequencing.

Agreements with pharmaceutical companies: Companies in the pharmaceutical industry have recognized the potential benefits of next generation sequencing as a research and development tool. During just part of 2015, Genentech announced two agreements, and Pfizer announced one.

Sequencing companies are starting to develop and commercialize kits that can be produced and sold to clinical laboratories following the traditional in vitro diagnostic (IVD) model. Illumina's MiSeqDx was the first cleared in vitro diagnostic (IVD) next generation sequencing system. MiSeqDx is also CE marked, and FDA-cleared tests are

currently available on this platform.

These are just selected highlights of recent activities in this rapidly changing market. Because of these trends, Kalorama expects the market to grow from its current size of 2.2 billion to 5.6 billion. The entire market is broken out in detail in Kalorama's Next Generation Sequencing Markets.

This Informative Analysis Helps You Track These Developments, with Reliable Market Estimates

The report provides the world markets for next generation sequencing in U.S. dollars for 2014 to 2018. As part of its analysis, the following data points are provided.

DNA Sequencing Systems Market Size and Forecast

DNA Sequencing Consumables Market, Size and Forecast

DNA Sequencing Services Market, Size and Forecast

Sequencing Market – Geographical Distribution (US, Europe, Asia, ROW)

Market Share by Major Competitor

Brand Ownership by Platform

DNA Sequencing Market – Research versus Clinical Applications

The sequencing market includes capillary electrophoresis sequencing systems (based on the early Sanger sequencing method) and also the rapidly growing next generation sequencing market. The market estimate includes both sequencing instruments plus consumables.

Who's Doing What In Sequencing: Superior Company Profiling

Competitor participation is an important part of the shaping of this market and the report devotes considerable detail to competitive analysis. Driven by the promise of clinical diagnostic applications, the DNA sequencing market is growing rapidly and companies are raising money. In early 2015 and throughout a busy 2014 there were many

investments in next generation sequencing companies and companies with products or services related to next generation sequencing. Pharmaceutical companies, for example, have recognized the potential benefits of next generation sequencing as a research and development tool. The report provides product information and financial information for over 100 companies that are involved in next generation sequencing including:

10X Genomics

23andMe, Inc.

Adaptive Biotechnologies Corporation

Admera Health (A GENEWIZ Company)

Advanced Biological Laboratories, S.A.

Agilent Technologies Inc.

AltheaDx Diagnostics, Inc.

Ambry Genetics Corp.

Aperiomics, Inc.

Appistry, Inc.

Asuragen, Inc.

Athena Diagnostics, Inc. (A Quest Diagnostics Business)

Base4 Innovation Ltd.

Beckman Coulter, Inc. (Subsidiary of Danaher Corporation)

BGI-Shenzhen

Bina Technologies, Inc. (Acquired by Roche)

BioDiscovery, Inc.

Bioinnovation Solutions SA

Biomatters Ltd.

bioMérieux SA

bioTheragnostics (A bioMérieux Company)

Cancer Genetics, Inc.

CareDx, Inc.

Caris Life Sciences

Chronix Biomedical, Inc.

CLC bio (A QIAGEN Company)

Complete Genomics (A BGI Company)

Courtagen Life Sciences, Inc.

Cypher Genomics, Inc.

DioGenix, Inc.

DNA Electronics Ltd.

DNASTAR, Inc.

Eurofins Genomics

Eurofins MWG Operon Inc. (A Eurofins Genomics Company)

Expression Analysis, Inc. (A Quintiles Company)

Fluidigm Corporation

Foundation Medicine, Inc.

GATC Biotech AG

GenapSys

GenDx

Gene by Gene, Ltd.

Genection, Inc. (An Invivoscribe Company)

GeneDx

GeneInsight, Inc.

GENEWIZ Inc.

Genia Technologies, Inc. (Acquired by Roche)

GenoLogics Life Sciences Software

Genomic Diagnostics Technologies

GenomOncology

Genoptix (A Novartis Company)

GigaGen, Inc.

GnuBIO, Inc. (Acquired by Bio-Rad Laboratories, Inc.)

Good Start Genetics, Inc.

HTG Molecular Diagnostics

Human Longevity, Inc.

Igenbio, Inc.

Illumina, Inc.

Innovations Exchange Pte Ltd (INEX)

iGene Diagnostics Pte Ltd (an INEX Company)

Insight Genetics, Inc.

InSilixa, Inc.

Intel Corporation

Intelligent Bio-Systems, Inc. (A QIAGEN Company)

Invivoscribe Technologies, Inc.

iRepertoire, Inc.

Knome Inc.

Laboratory Corporation of America (LabCorp)

LaserGen, Inc.

LifeCodexx AG (Subsidiary of GATC Biotech AG)

Life Technologies Corporation (Acquired by Thermo Fischer Scientific Inc.)

Mayo Medical Laboratories and Mayo Clinic

MolecularMD Corporation

Multiplicom NV

Nabsys, Inc.

Natera, Inc.

NeoGenomics, Inc./NeoGenomics Laboratories

NetBio, Inc.

NewGene Ltd.

NextCODE Health

NobleGen Biosciences, Inc.

N-of-One, Inc.

OncoDNA SA

OncoPlex Diagnostics (OncoPlexDx)

Oncospire Genomics

One Lambda, Inc. (A Thermo Fisher Scientific Brand)

Oxford Gene Technology

Oxford Nanopore Technologies Ltd.

Pacific Biosciences

Parabase Genomics

Pathway Genomics Corporation

PerkinElmer, Inc.

Personal Genome Diagnostics, Inc.

Personalis, Inc.

PicoSeq

Population Genetics Technologies Ltd.

QIAGEN N.V.

QuantuMDx Group

Quest Diagnostics

RainDance Technologies, Inc.

Response Genetics, Inc.

Roche

SeqLL, LLC

Sequentia, Inc.

Siemens Healthcare Diagnostics

Siemens

Sirona Genomics

SoftGenetics, LLC

Stratos Genomics Inc.

Swift Biosciences, Inc.

Symbiodx

Sysmex Inostics GmbH

Thermo Fisher Scientific, Inc.

Vela Diagnostics

WaferGen Biosystems, Inc.

ZS Genetics, Inc.

The information presented in this report is derived from publicly available information sources such as company reports and announcements, government reports and databases, medical organization reports, medical associations, and other publications. The analysis is based on the author's industry knowledge combined with literature searches and discussions with industry professionals and experts in the areas of point-of-care tests, decentralized healthcare and healthcare economics.

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Admera Health (A GENEWIZ Company)
Advanced Biological Laboratories, S.A
Agilent Technologies Inc.
Recent Revenue History
Company Overview
AltheaDx Diagnostics, Inc.

Ambry Genetics Corp.
Aperiomics, Inc.
Appistry, Inc.
Asuragen, Inc.
Diagnostic Products
Genomic Services
Clinical Lab
Companion Diagnostics
Athena Diagnostics, Inc. (A Quest Diagnostics Business)
Base4 Innovation Ltd
Beckman Coulter, Inc. (Subsidiary of Danaher Corporation)
Recent Revenue History
Company Overview
Next-Generation Sequencing - Sample Prep
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BGI-Shenzhen
Bina Technologies, Inc. (Acquired by Roche)
BioDiscovery, Inc.
Bioinnovation Solutions SA
Biomatters Ltd.
bioMérieux SA
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Company Overview
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Cancer Genetics, Inc.
Recent Revenue History
Company Overview
CareDx, Inc.
Recent Revenue History
Company Overview
Caris Life Sciences
Chronix Biomedical, Inc.
CLC bio (A QIAGEN Company)
Complete Genomics (A BGI Company)
Courtagen Life Sciences, Inc.
Cypher Genomics, Inc.
DioGenix, Inc.
DNA Electronics Ltd.
DNASTAR, Inc.

Eurofins Genomics
Eurofins MWG Operon Inc. (A Eurofins Genomics Company)
Expression Analysis, Inc. (A Quintiles Company)
Fluidigm Corporation
Recent Revenue History
Company Overview
Foundation Medicine, Inc.
Recent Revenue History
Company Overview
GATC Biotech AG
GenapSys
GenDx
Gene by Gene, Ltd.
Genection, Inc. (An Invivoscribe Company)
GeneDx
GeneInsight, Inc.
GENEWIZ Inc.
Genia Technologies, Inc. (Acquired by Roche)
GenoLogics Life Sciences Software
Genomic Diagnostics Technologies
GenomOncology
Genoptix (A Novartis Company)
GigaGen, Inc.
GnuBIO, Inc. (Acquired by Bio-Rad Laboratories, Inc.)
Good Start Genetics, Inc.
HTG Molecular Diagnostics
Human Longevity, Inc.
Igenbio, Inc.
Illumina, Inc.
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iGene Diagnostics Pte Ltd (an INEX Company)
Insight Genetics, Inc.
InSilixa, Inc.
Intel Corporation
Recent Revenue History
Company Overview
Intelligent Bio-Systems, Inc. (A QIAGEN Company)

Invitae Corporation
Recent Revenue History
Company Overview
Invivoscribe Technologies, Inc.
iRepertoire, Inc.
Knome Inc.
Laboratory Corporation of America (LabCorp)
Recent Revenue History
Company Overview
LaserGen, Inc.
LifeCodexx AG (Subsidiary of GATC Biotech AG)
Life Technologies Corporation (Acquired by Thermo Fischer Scientific Inc.)
Recent Revenue History
Company Overview
Mayo Medical Laboratories and Mayo Clinic
MolecularMD Corporation
Multiplicom NV
Nabsys, Inc.
Natera, Inc.
NeoGenomics, Inc./NeoGenomics Laboratories
Recent Revenue History
Company Overview
NetBio, Inc
NewGene Ltd.
NextCODE Health
NobleGen Biosciences, Inc.
N-of-One, Inc.
OncoDNA SA
OncoPlex Diagnostics (OncoPlexDx)
Oncospire Genomics
One Lambda, Inc. (A Thermo Fisher Scientific Brand)
Oxford Gene Technology
Oxford Nanopore Technologies Ltd.
Pacific Biosciences
Recent Revenue History
Company Overview
Parabase Genomics
Pathway Genomics Corporation
PerkinElmer, Inc.

Recent Revenue History
Company Overview
Personal Genome Diagnostics, Inc.
Personalis, Inc.
PicoSeq
Population Genetics Technologies Ltd
QIAGEN N.V.
Recent Revenue History
Company Overview
QuantuMDx Group
Quest Diagnostics
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